MATTHEW CHAN

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EDUCATION

Ontario Tech University | **Masters Thesis** | *C#, Python, Pandas, NumPy, Tensorflow, AI*   **Sep. 2021 – March 2024**

Master of Science in Computer Science - Characterizing Midair Handwriting   *Oshawa, Ontario*

- Developed a data gathering application following Object-Oriented Programming principles for Masters thesis, recorded 480 files of frame-by-frame data containing.
- Wrote Pythons scripts to clean and standardize data, automate machine learning to train and test a total of 84 models via Tensorflow, achieved an overall 85% accuracy.
- Wrote additional Python scripts to visualize participant feedback via Matplotlib & Seaborn, and developed a C# application in Unity to perform visual analysis.

Ontario Tech University   **Sep. 2016 – April 2021**

Bachelor of Science in Computer Science - Undergraduate Thesis   *Oshawa, Ontario*

TECHNICAL SKILLS

Languages: Python, Java, C#, C++, HTML/CSS, JavaScript, Typescript, SQL, Dart
Tools & Frameworks: Git, Github, Postman, NodeJS, React, Bootstrap, Docker, AWS (S3, EC2), Nginx, Numpy, Pandas, Tensorflow, Flutter, Firebase
Databases: PostgreSQL, MongoDB

PROJECTS

Todo Web App | *PostgreSQL, Express, React, NodeJS, AWS EC2, Docker*   **June 2024**

- Full stack web application for adding, editing and deleting todo reminders.
- Implemented RESTful API via NodeJS and Express for backend, used PostgreSQL for efficient storage and retrieval of data.
- Deployed on AWS EC2 on public IPv4 address, utilized Nginx for web server and systemd to host Node server.
- Utilized Docker to containerize frontend, backend and database for efficient building.

Holiday Checker | *React, AWS S3, SCSS*   **May 2024**

- React web application that displays the upcoming Canadian holiday. Utilized public API to fetch data on Canadian holidays.
- Performed binary search to look for the next upcoming holiday, improving search speed by 1200% compared to linear search.
- Implemented using single component, added styling and animations via CSS & SCSS for memorable user experience.

Baseball Stats Website | *React, Redux, AWS S3, NodeJS, JWT, MongoDB, Python*   **April 2024 - May 2024**

- Created React web app to fetch data of baseball player stats per game, used Redux store to manage application state, deployed frontend on AWS via S3 storage for static web page hosting.
- Developed backend using NodeJS & Express to create RESTful API, created routes to handle user login/logout using refresh tokens via JWT and cookies.
- CRUD operations performed with database stored in MongoDB, used to retrieve user data and update list of favourite players.
- Hosted local Flask server to simulate and avoid external API calls, resulted in $0 cost during debugging.

EXPERIENCE

Teaching Assistant   **September 2021 – December 2022**

Ontario Tech University   *Oshawa, Ontario*

- Prepared and presented code and demos for multiple lab sessions to teach classes of 20-30 students relevant course content, answered student questions on an on-call basis to minimize student wait time.
- Marked midterms, assignments & weekly lab assignments, ensuring deadlines for returning grades are met. Provided useful advice to students for lost marks and answered any inquiries to ensure students received necessary feedback to improve.
- TA for Programming Workshop (introductory C++ course), Web Application Development, Software Quality Assurance and Mobile Devices (Mobile application development).

Summer Research Assistant   **May 2021 – August 2021**

Ontario Tech University   *Oshawa, Ontario*

- Built a mobile augmented reality data visualization application for iPhone and iPad using Swift and XCode for guided data exploration experience.
- Cooperated with team of researchers to communicate objectives, implemented bookmarking & collaborative features utilizing AR space.

References available upon request